

The Milwaukee Cleaner River Conference

November 17, 2005

Milwaukee, Wisconsin





CITY OF MILWAUKEE CODE OF ORDINANCES CHAPTER 120

STORMWATER MANAGEMENT REGULATIONS

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What am I talking about today?

- History of SWM regulations in Milwaukee
- Stormwater Management Plans: when are they required?
- SW Quality Management
- SW Quantity Management
- Quality & Quantity Using LID
- Exemptions & Waivers
- Common Misconceptions

A Brief History of SWM in Milwaukee

- Milwaukee was the first City in Wisconsin to be issued a Wisconsin Pollutant Discharge Elimination System (WPDES) Permit
- Milwaukee was one of the very first municipalities in the State to adopt a SWM ordinance
- Chapter 120 became effective on 11/18/1992
- The ordinance has been amended numerous times, with major revision taking place on 2/5/2002
- Over 900 SWMPs have been approved by the City Engineer to date

Purpose of Chapter 120

- Major objective of Chapter 120 is to establish procedures to control adverse impacts associated with stormwater runoff and to assist in the attainment and maintenance of water quality standards

And also to...

- Maintain runoff characteristics after development as nearly as possible to runoff characteristics of 11/18/1992

Why 11/18/1992?

- This was the date the original Ordinance became effective
- Was set as baseline for existing site conditions
- So if your site is presently pervious, but it can be proven that hard surfaces existed on or after 11/18/1992, these surfaces will be treated as existing condition (less detention \$\$!)

When is a Stormwater Management Plan (SWMP) required?



The SWMP requirement is usually triggered if a development or redevelopment causes land disturbing activities, provided that a certain gross aggregate area (GAA) is exceeded per Chap. 120 (as explained below!)

More History!

- On 1/1/2002, MMSD Rules Chapter 13 became effective
- Chapter 13 states that runoff management is required if an increase of 0.5 ac. or more of impervious surface is added
- In 2002, DNR adopted runoff quality management rules

More History!

Based on the MMSD and DNR rule changes,
City amended Chapter 120 on 2/5/2002

- Prior to the 2002 changes, Chapter 120 required runoff management for areas with a common ownership of five acres or more
- Stormwater quantity control was required, but quality management was not

So, based on these rule changes, a SWMP is presently required if:

- A land disturbing activity is planned for a property that has a gross aggregate area of one acre or more (including commonly owned adjacent parcels), or if
- A land disturbing activity is planned for a property that increases the hard surface area by 0.5 ac. or more

Stormwater Management Plans (120-9)



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Stormwater Management Plans (120-9)

- Must be prepared to document the implementation of required measures per the ordinance
- Must be prepared in accordance with 120-9 guidelines
- SWMPs address (among other things) runoff management requirements for quality, quantity or both
- A complete explanation of the entire SWMP contents will be addressed in a later presentation

Stormwater Management: Quality Control



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But first, please remember that:

When your car's leaking
oil on the street,
remember it's not just
leaking oil on the street.



Stormwater Quality Management (120-7.6)

- Required if Area is 1 acre or more in separated sewer areas
- Required in combined areas only if directly discharging to a waterway



Stormwater Quality Management

(120-7.6)

- Removal of total suspended solids (TSS) in stormwater.
 - Remove 40% TSS for re-developments
 - Remove 80% TSS for new developments
 - Must provide calculations to show TSS removal %; SLAMM Model usually used

- Good housekeeping and pollution prevention practices (non-structural BMPs):
 - Maintenance of structural BMPs
 - Parking lot sweeping
 - Scheduled litter clean up
 - Covered waste bins
 - Employee/resident training on storm water issues

Stormwater Management: Quantity Control



Quantity Management

(120-1.1.e, 120-7.2, 120-7.5)

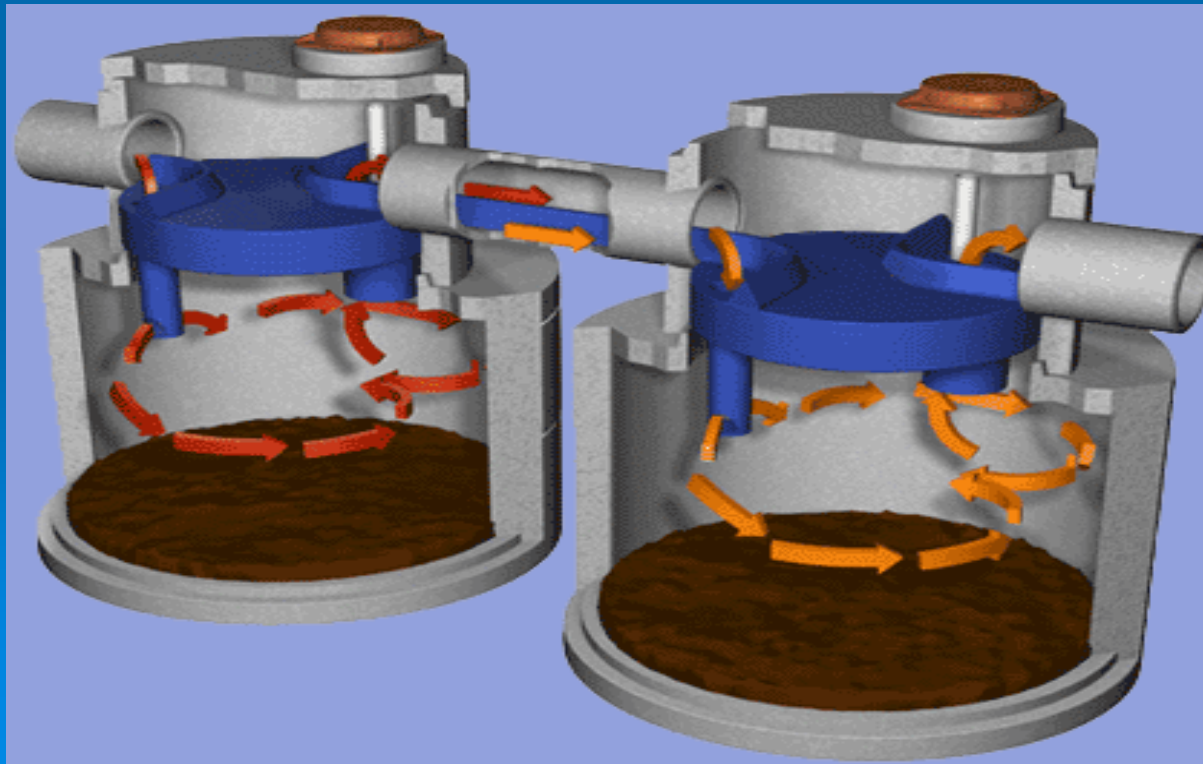
- Required when area is 1 acre or more or if adding 0.5 ac of new impervious surface
- If not increasing impervious surface by 0.5 ac., limit the post-development peak Qs to the pre-development peak Qs
- If increasing the impervious surface by 0.5 ac., runoff management per Chapter 13 of MMSD: 0.15 cfs per ac. for the 2-year event and 0.50 cfs per ac. for the 100-year event
- May also use the Volumetric Design analysis to achieve MMSD requirements (go to MMSD.com for guidance!)

Quality & Quantity Management: Structural BMPs



Quality Management: Conventional BMPs

- Wet Ponds (Retention Ponds)
- Sumped Catch basins and proprietary devices such as Baysaver® and Stormceptor®



At this point, I'd like to remind you that...

When you're washing
your car in the driveway,
remember you're not
just washing your car in
the driveway.



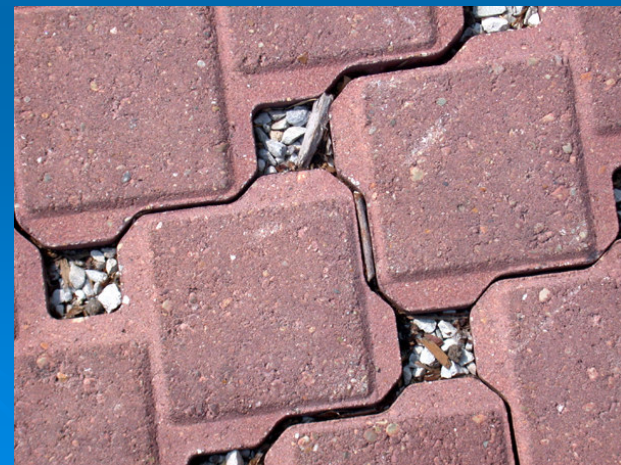
Quantity Management: Conventional BMPs

- Dry Ponds (Detention Ponds)
- Underground detention
- Rooftop storage



Quality & Quantity Control

Low Impact Developments

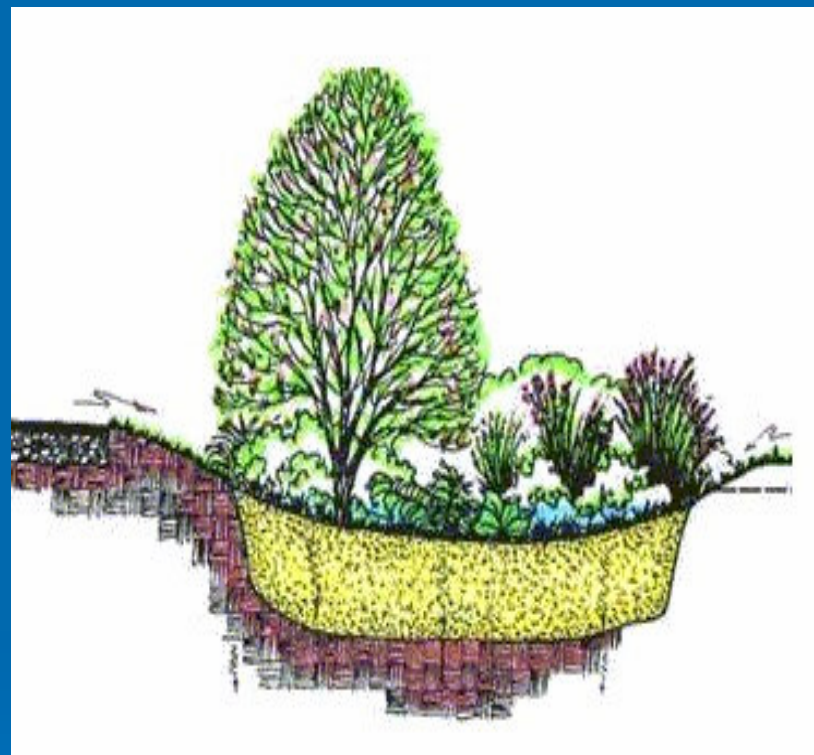


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Quality & Quantity Management: Low Impact Development

What is LID?

- Low Impact Development (LID) has emerged nationally as a highly effective and attractive approach to reducing stormwater pollution and volume
- Its purpose is to reduce (lower) the impact of new development on urban stormwater flows
- LID takes a lot-level approach to stormwater management, treating rainwater where it falls by creating conditions that allow the water to infiltrate back into the ground



Examples of Low Impact Development Practices:

- Rain Gardens and Bioretention
- Rooftop Gardens (Green roofs)
- Vegetated Swales
- Permeable Pavers
- Soil Amendments
- Impervious Surface Reduction
- Pollution Prevention and Good Housekeeping
- Downspout Disconnection
- Rain Barrels and SW harvesting



Exemptions (120-7.3) & Waivers (120-7.4) to the SWMPs

Exemptions

- Agricultural activities
- Maintenance activities to an existing structure with a previously approved SWMP, unless the activity drastically changes water quality or quantity
- Maintenance activities undertaken by governmental agencies

Waivers

➤ Development does not:

- increase the rate or volume of stormwater runoff

And does not

- Have adverse impact on waterways

Another Reminder!

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When you're fertilizing
the lawn, remember
you're not just
fertilizing the lawn.



Common Misconceptions and Questions:

- My existing site condition is 100% impervious, therefore I am not increasing the post development flows and so no detention is required. I don't have to do a SWMP, right?

WRONG!

No detention needed does not mean no SWMP required!

Especially if your development is in the separated sewer area

Remember, there are quantity requirements (detention) and quality requirements (TSS removal, good house keeping practices, etc.)

Common Misconceptions and Questions:

Is construction erosion control part of a SWMP?

NO!!

The SWMP covers post-construction storm water management only. A separate erosion control plan, permit, fee, and bond is required through the Department of City Development (DCD) and is governed by Chapter 290

Common Misconceptions and Questions:

Can a SWMP be a substitute for a Storm Water Pollution Prevention Plan (SWPPP) as required by the WDNR?

Sorry, no again!!!

An approved SWMP does not relieve the owner of a development from submitting a Notice of Intent (NOI) and related SWPPP to the WDNR. Conversely, having a SWPPP approved by the WDNR does not relieve the owner from submitting a SWMP to the City

To Summarize:

- The present ordinance became effective on 2/5/2002
- A SWMP is required if the GAA is 1 ac or more, or if adding 0.5 ac of new hard surface
- A SWMP addresses requirements for quality, quantity or both
- Best Management Practices are measures used to address the quality and quantity requirements, and they can be structural or non structural
- LID is an emerging technique to controlling SW pollution and can provide some SW attenuation

**And finally, I would like to
leave you with this:**

When your pet goes
on the lawn,
remember it doesn't
just go on the lawn.



Thanks for listening, any Qs?



Graphics used with permission!

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